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Information Commons Services for Learners and Researchers: Evolution in Patron Needs, Digital Resources and Scholarly Publishing

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Abstract:

Since approximately 1990, the Information Commons has emerged as an effective model of integrated library public services. The Information Commons combines traditional, paper-print, high-touch library services and resources with computer technologies and digital resources in a relatively seamless service environment. Extensive computer resources for Web research, free Web resources and proprietary electronic databases complement the full spectrum of productivity software and specialty scanning, digitization and multimedia resources. Numerous examples from North America and elsewhere and links to others will be provided.

The Information Commons model considers change and evolution in patron needs vis-à-vis 1. staff training and attitude, 2. quantity, quality and type of information resources, 3. unmediated access and personal control in patron learning and research (especially in search technologies), and 4. architectural layout and aesthetic nature of the library facilities.

The learner and researcher share many needs, but the complexity of high-level research often warrants special consideration. High-level research needs and knowledge creation are the focus of the budding Research Commons at a few institutions. The Open Access (OA) movement pays special attention to evolving research and scholarly publishing needs.

Since the late 1980's, academic libraries in higher education have focused more strongly than previously on patron-centered, learner-centered, user-friendly services. This has been especially true in North American (NA) institutions. Models of "integrated library public services" implementations arose in several areas and proliferated through the first half of the 1990's; many of these implementations are known as "Information Commons" (IC). With the evolution from the Internet (text-based) to the World Wide Web (GUI – graphical user interface – and hyperlinking) in the mid-1990's, and ever-greater access to electronic information resources, Information Commons have proliferated into hundreds of institutions and continue to evolve into more effective delivery of patron services.

It might be helpful to describe the variety of academic programs and patrons, which are commonly supported and served in NA academic libraries, where IC's have proliferated most extensively. The NA higher education structure and environment differ significantly from those in many other parts of the world, and the IC model emanates from this structure and environment and from the needs of these users.

North American higher education consists of numerous types of institutions, which educate **and** train students. This education and training include the "liberal arts" academic programs (humanities, social sciences, arts, natural and earth sciences), pre-professional and professional programs (education/pedagogy, nursing, business, law, medicine, etc.:

<http://www.princetonreview.com/college/research/majors/majorSearch.asp>, or

<http://www.a2zcolleges.com/Majors/>), and (especially in NA two-year community colleges) many vocational programs, also known as the "illiberal arts" (trades, including culinary arts, electrical, auto, technology hardware, crafts, etc.: <http://www.cpcc.edu/degrees/>). Also, each US state has a "land grant" institution (e.g., Texas Agricultural & Mechanical/A&M University), whose educational missions are broad and include many fields of study, "liberal arts", pre-professional and professional. The library at each of the institutions is expected to serve and meet the needs of the full range of student and faculty as their primary patrons; however, patrons from the general public are usually considered a secondary but important patron cohort. Thus, there is 1) a broad range of informational resources (breadth of subject areas and depth of collections), 2) a wide variety of learning styles, and 3) extensive variation in informational needs and readiness to use available resources to meet these needs.

The Association of College and Research Libraries (ACRL) has developed a set of articulated "information literacy" (IL) standards (with articulated goals and competencies -

<http://www.ala.org/ala/acrl/acrlstandards/informationliteracycompetency.htm>). As quoted in this document's introduction and definition, information literacy requires an individual to "recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information." It further states that an "information literate" individual will be able to:

- "Determine the extent of information needed
- Access the needed information effectively and efficiently
- Evaluate information and its sources critically
- Incorporate selected information into one's knowledge base
- Use information effectively to accomplish a specific purpose
- Understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally."

Information literacy is the curriculum that information professionals teach within the **Information Commons framework**. Information literacy and the Information Commons are complementary organizing principles for effective library work. Information literacy provides intellectual touchstones for understanding and articulating what we as information professionals can teach our patrons (cf. Benjamin Bloom's 1956 *Taxonomy of Educational Objectives*, cognitive domain: knowledge > comprehension > application > synthesis > evaluation). The Information Commons model helps in designing, selecting and organizing resources (informational, technology and staff) and space for the most effective patron-centered public services.

There is "pre-Information Commons" precedent for "integration of library and related services" in the US. In the US, community colleges (or junior colleges, as they were earlier known) have long provided multiple, integrated services in their libraries (Learning Resource Centers) out of practical necessity (cf. Maricopa and Mesa Community Colleges in Arizona). Small liberal arts college libraries have long done something similar in terms of integration, although in the liberal arts college library the integration had a bit much to do with the concepts of "interrelatedness" and "interdisciplinarity" at the core of the liberal arts traditions. However, **in neither of these two cases was the integration of services conceptually and intellectually based on learner needs in a high technology environment. This planful, explicit integration is at the heart of the Information Commons.** The Information Commons concept focuses on the need to provide

- Research guidance and technical support for patrons, who need access to information in all formats, with an ever-increasing quantity of digital resources;
- Access to appropriate hardware and production/presentation software to process the acquired information as needed and support for these hardware/software resources;
- Appropriate physical spaces to allow, support and enhance patrons' research and production (Bailey-Tierney, 277).

It is important to look briefly at a couple of pertinent issues. **One** is the series of major changes, which occurred in the world of libraries about a decade ago. Libraries have traditionally had collections at the core of their existence. With the advent of the Internet evolving into the Web, patron services have risen as equal to collections in importance. Collections are no longer only or primarily housed and waiting in the library "just in case," where library professionals can respond to questions about access, use, etc. The "collection" is a fluid combination of on-site materials (paper, fiche, etc.), proprietary databases, electronic journals and aggregator databases, open-access archives (e-prints, pre-prints, digital collections, etc.), resources often created at-time-of-need ("on-the-fly"), Web catalogs (e.g., <http://lii.org/>), growing "collections" like Google Scholar, Google Print, and Amazon's "search inside the book," and, of course, the full range of search-engine accessible resources on the Web. To make appropriate use of this vast quantity of variegated information, the learner and the researcher need unique and effective support and service. **The value of "collections" is now balanced by the value of "services".**

The **second** issue is the question of **who our learners and researchers are**, what their learning styles and habits are, and how we can most effectively serve them now and in the foreseeable future. Several recent publications bring important focus to pertinent characteristics and habits of these learners, **who will soon be our higher education researchers**. EDUCAUSE recently (fall, 2004) published *Educating the Net Generation* and CLIR (Council on Library and Information Resources) published its *Library as Place* in February, 2005 (see links to e-texts of these in the Bibliography). In these and similar studies, we realize the necessity of rethinking, revising and patterning our services on the changing needs of our learners, our

researchers, our patrons: the Net Generation, Millennials, Neo-Millennials, Digital Natives, those born and come of age since the early to mid-1980's. Library collections and services designed for 1985 or 1990 may not survive the first decade of the 21st century unless they adapt. The "commons" concept provides some insight into possibilities for effective adaptation to survive and thrive.

What follows is a description of the most common elements of integrated services in an Information Commons. **An Information Commons:**

- Is physically located on one or more floors of a library
- Provides access to traditional library services, "high-touch" and face-to-face – provides general information, library catalog access, reference/research services, reserves, circulation, interlibrary loan/document-delivery, etc.
- Constitutes a high-technology-rich environment, "high-tech" and easy, often high-speed remote access – networks, public access computers and other high-tech equipment of various types as needed
- Provides resources (hardware, software, support) for what was formerly a "computer lab" plus various specialty computer labs (e.g., scanning image and optical-character-recognition/OCR lab, a multi-media, digital video processing lab, etc.) integrated in terms of space, desks, staff, training, etc., into the traditional library services
- Includes and supports the full range of productivity software (e.g., MSOffice, statistical packages like SPSS/SAS, GIS mapping packages like ArcView, mathematics packages like Maple, Adobe Acrobat, image manipulation packages like Photoshop, OCR packages like OmniPage, digital video editing packages like Illustrator and Premiere, etc.)
- Uses the "electronic continuum of knowledge media" (Beagle) often called the electronic or virtual commons
- Provides and equips with appropriate technology various collaborative learning and work spaces
- Emphasizes Beagle's "continuum of service: 1. search & retrieval, 2. processing and interpretation, and 3. packaging, presentation and production" of information into knowledge
- Creates near-seamless integration in terms of space, services, resources, services desks, staff and appropriate cross-training
- Is library-centric, in that it basically integrates traditional library services with those of general and specialty computer labs
- Can be seen as (per Beagle and the American Council on Education)
 - **An adjustment of the traditional library** – e.g., adding a computer lab with basic productivity software in the library, with resource access and some coordination; minimal space design implications – library-centric
 - **An isolated change in part of the library** – e.g., adding a computer lab with a broad range of multi-media productivity software and many formats, access to all resources and extensive integration of space, resources and staff into the continuum of library services, with significantly altered patterns of service, aligned with institutional mission; but still library-centric

The Information Commons is an evolving concept, which can be implemented in part and/or in incremental stages. It does not have to spring fully formed and equipped, as Athena from the head of Zeus. Most institutions move in increments; only those who find broad and deep cultural and financial support are able to implement an Information Commons in its entirety as a single implementation project.

The primary emphasis of Information Commons services is to provide for learner, researcher, patron needs, as the evolving nature of the learner is clarified and monitored over time.

Complementary points of IC needs-centered services are, among others:

- Point of need – where in the contemplation and research process is the patron, at the beginning, middle, etc.?
- Time of need – many student (and other) learners and researchers are most active 3:00PM till 6:00 AM, times when most libraries are physically closed; thus, some 24/7 accommodation is de rigueur
- Place of need – many student (and other) learners and researchers require services at some place other than the traditional service desk, e.g., elsewhere in the public space or group study rooms, elsewhere on campus, or at home

- Level of need – variable level of complexity between, e.g., an 18-year-old, a graduate student and a senior research doing research must be consider – the services must be adjusted to the varied level of complexity
- Format of need – many student (and other) learners and researchers are not willing to remain with the format or container which libraries have emphasized (i.e., the book, database, journal, or even article); many want only the few most pertinent pages (Amazon's and Google Prints "six-page span") or only the page, sentence, graph or chart, not the **larger format, the traditional "container"**.

There are several Web sites at which extensive realia, descriptions, images, floor plans, etc., of existing Information Commons facilities can be found. One is at Brookdale Community College and was created by David Murray: http://www.brookdale.cc.nj.us/library/infocommons/ic_home.html. This is a catalog of nearly 100 IC implementations with extensive data and links. They are accessible by institution name, by geographic location, or by Carnegie classification (doctoral extensive; doctoral intensive; master's comprehensive I and II; baccalaureate colleges liberal arts, general and associate's; associate's colleges; medical; and non-US). There are also contacts, job descriptions and floor plans for some institutions.

A second Web site is at Victoria University in Vancouver, Canada, and is a sabbatical project of Joanne Henning. She is traveling across North America visiting and documenting Information Commons facilities: <http://jhenning.law.uvic.ca/>. The Web site includes extensive first-hand information from the 25+ site visits (as of January, 2005), including very helpful photographs of each. For the Czech audience, Petra Jedličková's two articles in *IKAROS* are informative and accessible (<http://www.ikaros.cz/Clanek.asp?ID=200403005> and <http://www.ikaros.cz/Clanek.asp?ID=200403001>).

While we have several assessment tools for judging how well the Information Commons meets patron needs, **LibQUAL+™** (<http://www.libqual.org/>) is most helpful. Quantitative data can also be helpful, and IC implementations almost always result in higher gate-counts, service transaction statistics, and, somewhat surprisingly, increased circulation of traditional materials. LibQUAL+™ is a full-market assessment of patrons' service perceptions and has provided valid, reliable, demographically representative information on **patron perceptions** of services in hundreds of libraries over the last 5-6 years. Its areas of emphasis, "domains" of service, are noteworthy and are at the core of Information Commons concepts:

- Affect of service – how helpful, supportive, dependable and knowledgeable are the staff
- Access to information – how adequate is the "collection" and how accessible is it
(including remote access via proxy server or VPN/virtual personal network)
- Personal control – the most important domain: how well does the library create a sense of self-sufficiency and independence in the patron
- Library as place – this is an indication of the patrons' physical, aesthetic, and intellectual comfort in library spaces as well as an indication of the appropriateness of space design and usage for varied patron needs.

From all measurements of service in Information Commons implementations, there has been increased patron satisfaction and usage. Longitudinal data and direct links to student outcomes are only now becoming available, but we can say with certainty that the first decade of "commons" implementations has clearly realigned library services more closely with learner and researcher needs.

The Information Commons focuses most strongly on the needs of the undergraduate patron, although we often seen 50% or more of our patrons from graduate student and faculty groups. High-level researchers have unique needs, which require special tools and environments. Some larger research institutions, most notably Indiana University Bloomington, are developing a **Research Commons** complement to their Information Commons. The Research Commons will bring high-level research collection access (in whatever format) to individual and groups of researchers, in the same building or widely scattered around the world, in such a way as to allow and facilitate genuine, substantive synchronous and asynchronous collaboration, just as the Information Commons provides this to a more general higher education audience (often undergraduates).

New initiatives in the area of "collections" resources are evolving to complement evolving IC services. The **Open Access (OA) movement** broaches topics of greatest interest to serious researchers, although the information made available via the OA movement is useful and accessible for learners and researchers at all levels. The **Open Archives Initiative (OAI)** facilitates access to various research

collections, including digital collections (e.g., Northern Arizona University's Colorado Plateau Digital Archives at <http://www.nau.edu/library/speccoll/index.html>) as well as numerous **Institutional Repositories** (MIT's DSpace research site at <https://dspace.mit.edu/index.jsp>). The Open Access movement is also important to learners and researchers at all levels, because of increased "free" access to open access journals and their scholarly productivity. There are several gateways to help learners and researchers locate "free" scholarly material.

The "Self-Archiving Policy by Journal" site lists which journals have and have not already given their green light to author self-archiving. It is based on data currently maintained by the SHERPA project (<http://romeo.eprints.org>). The SHERPA project (<http://www.sherpa.ac.uk/romeo.php?all=yes>) provides summaries for publisher default policies on copyright and self-archiving. Also note the "Demonstration EPrints Archive" (<http://demoprints.eprints.org/>) available for any institution wanting to set up open archives for self-authoring. One substantive resource collection is the OA Physics/Mathematics Archive <http://arxiv.org/>, where authors can self-archive their articles to make them Open Access (OA). The Public Library of Science (PLOS) is another model initiative (<http://www.plos.org>). This growing body OA collections is a dynamic complement to the evolving body "commons" services.

The "commons" concept and Information Commons implementation offer learners, researchers and information professionals a physical, technological, social and intellectual location to pursue various educational and research curricula and activities. The learner and researcher find opportunities for independent, self-sufficient contemplation, research, productivity and creativity facilitated by the seamlessly integrated continuum of resources and services in the commons. While the various iterations of the commons concept in academic libraries are less than two decades old, it is clear that they hold promise of an enlightened era of vibrancy and intelligence in libraries and great hope for those of us who strive to collaboratively produce and share the vision of **the dynamic library commons**.

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